LAKE PROTECTION PLAN FOR CRAVATH AND TRIPPE LAKES WALWORTH COUNTY WISCONSIN

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Southeastern Wisconsin Regional Planning Commission

UNIVERSITY OF WISCONSIN
WHITEWATER

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University of Wisconsin-Whitewater

Outline of Presentation

- 1. The Lakes
- 2. The Flora and Fauna of the Lakes
- 3. Recreational Uses of the Lakes
- 4. The Watersheds

- 5. Issues and Opportunities
- 6. The Future

1. The Lakes

- Cravath Lake
  - 68 acre impoundment
  - 10 feet maximum depth
  - 3 feet average depth
- Trippe Lake
  - 113 acre impoundment
  - 8 feet maximum depth
  - 3 feet average depth

- The Lakes are named after James Trippe (proprietor of the Town site) and Prosper Cravath (surveyor)

Bathymetry of Cravath and Trippe Lakes

Water Quality

- Trippe Lake Data
  - Secchi Disc Transparency
    - Average 2004-2006/2009 = 6.2 feet
  - Chlorophyll-a
    - Average 2004-2006/2009 = 3 – 6 µg/l
  - Total Phosphorus
    - Spring 2004-2006/2009 = 43.5 µg/l

Trophic Status

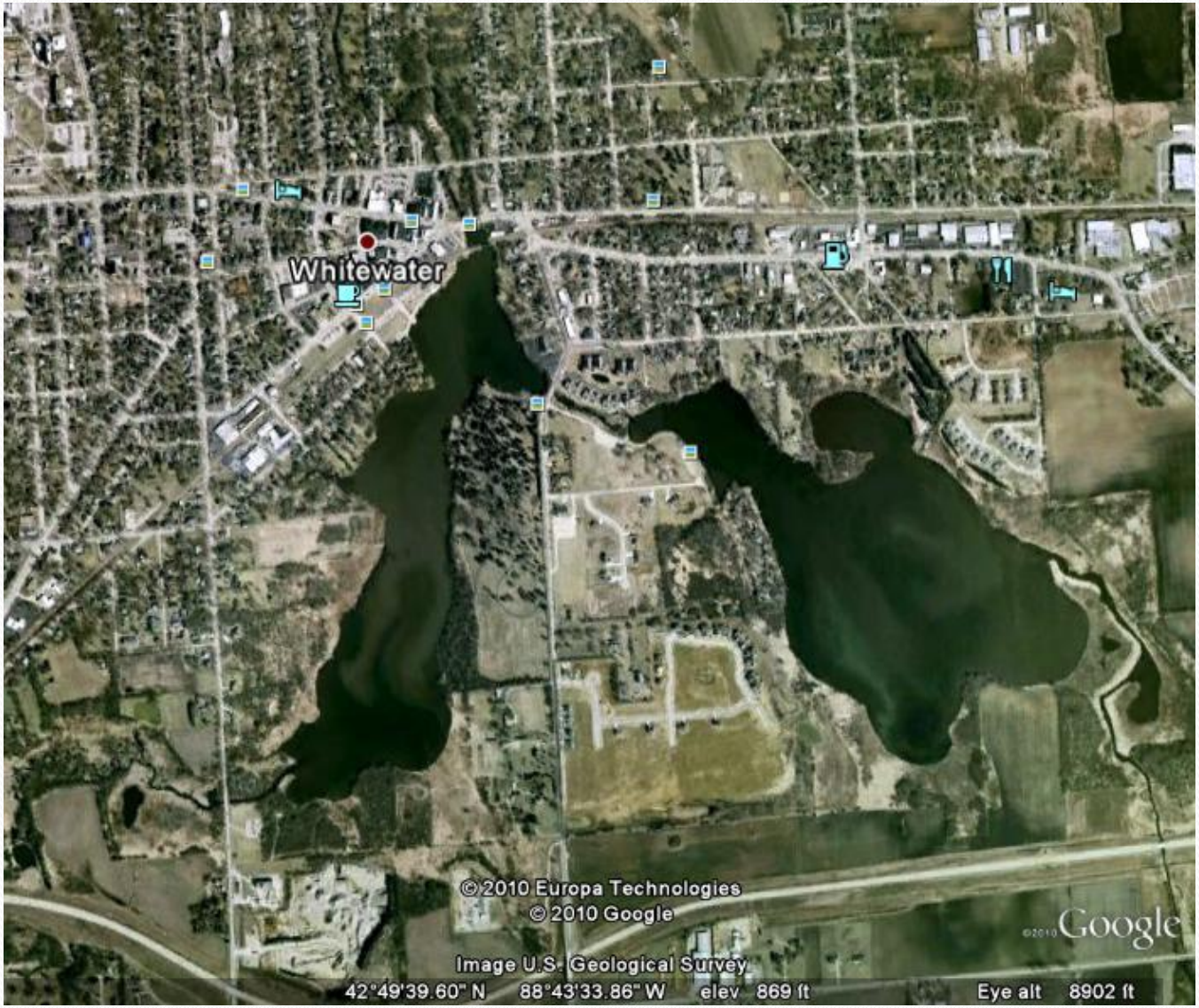
- Wisconsin TSI values
  - Secchi Disc = 51
  - Chlorophyll-a = 46
  - Total Phosphorus = 57

- Lake is Meso-eutrophic/Eutrophic
  - Eutrophic lakes are nutrient-rich lakes, often experiencing excessive aquatic macrophyte growths and productive fisheries with occasional winter-kills

Characteristics of Shallow Lakes

- Abundant aquatic plant growth
- Emergent and floating-leaved aquatic plants such as cattails, bulrush, water lily , and reeds
- Submerged plants, such as coontail provide excellent food and habitat for zooplankton, insects, fish, waterfowl, and other wildlife.
- Aquatic vegetation also anchors sediments, maintaining water clarity

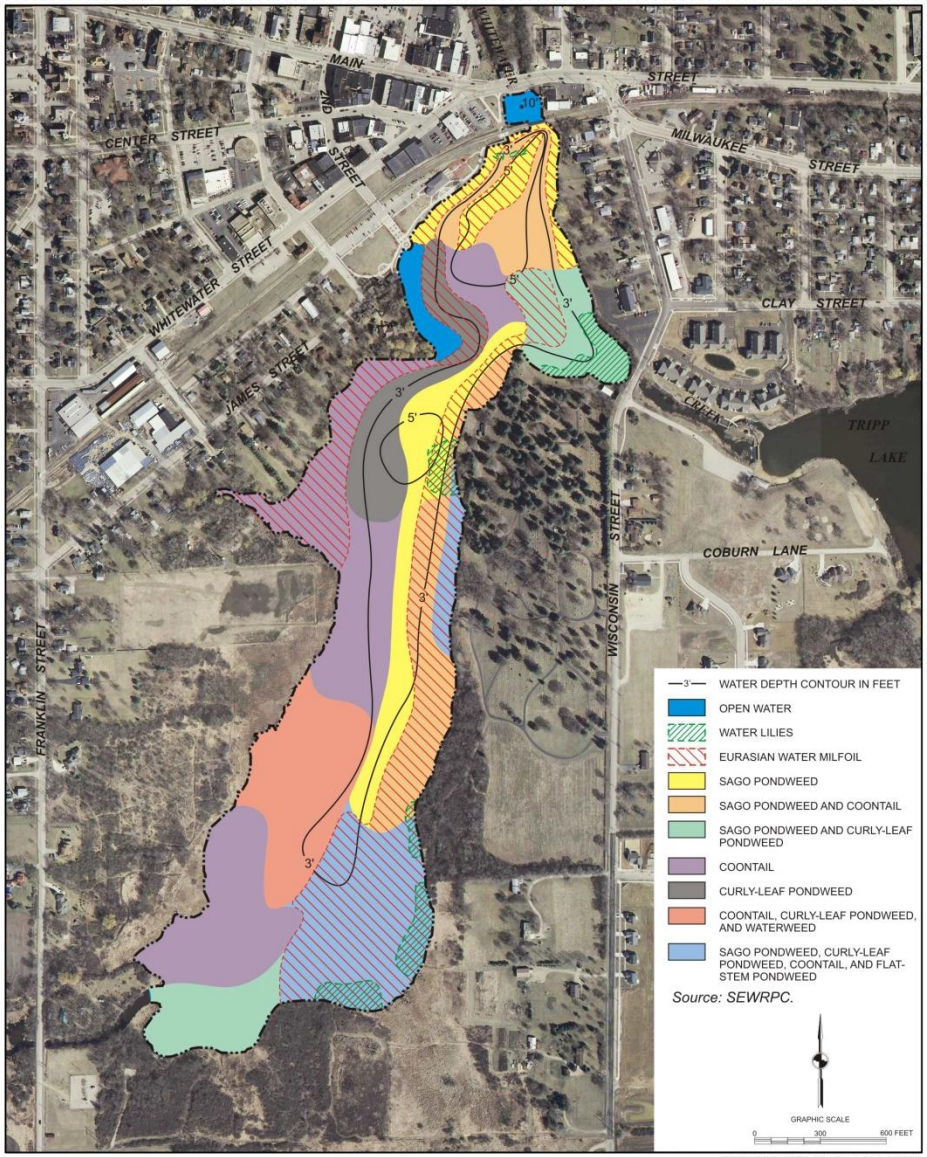
Cravath and Trippe Lakes



2. Flora and Fauna

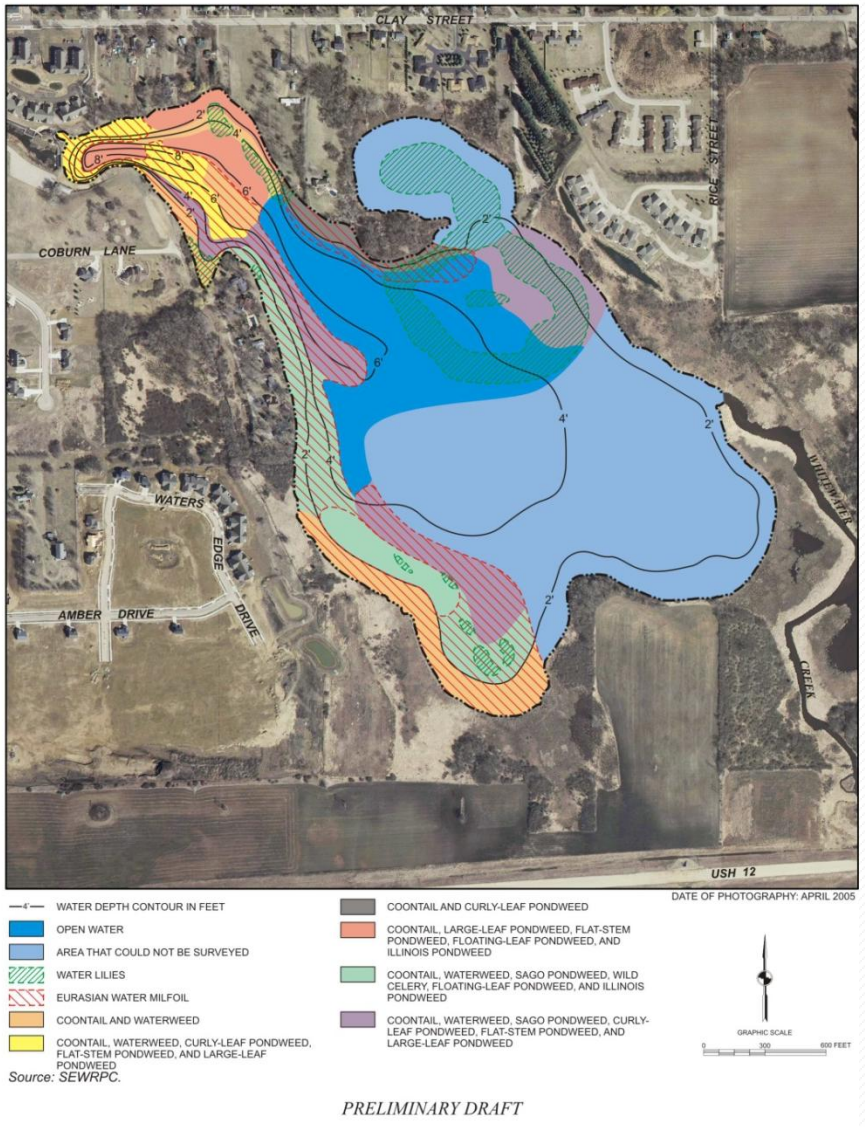
Aquatic Plant Surveys

- 2008 Cravath Lake Survey
  - Dominant Species:
    - Sago pondweed
    - Coontail
    - Eurasian water milfoil



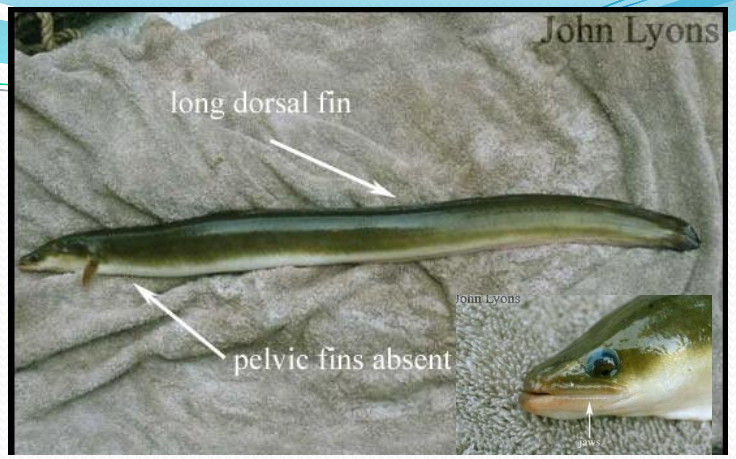
Aquatic Plant Surveys

- 2008 Trippe Lake Survey
  - Dominant Species:
    - Coontail
    - Eurasian water milfoil
    - Elodea
    - Nymphaea

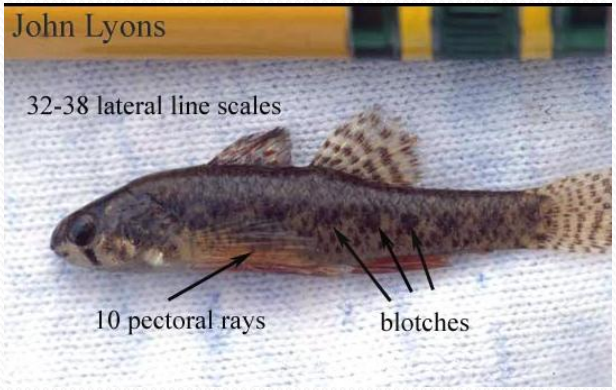


Fishes

- Panfish – common
- Largemouth bass and Northern pike – present



- State designated species of special concern
  - Cravath Lake
    - American eel
  - Trippe Lake
    - Lake chubsucker
  - Whitewater Creek
    - Least darter



Fisheries

- Stocking
  - Cravath Lake
    - Northern pike: 1985 – 2001
      - Approximately 140 8-inch fishes per year
  - Trippe Lake
    - Northern pike: 1982 – 2001
      - Approximately 250 8-inch fishes per year

3. Recreational Use

Recreational Boating

- Watercraft counts 2008
  - Cravath Lake: 16 watercraft
    - 7 Paddleboats
    - 5 Canoes
    - 4 Rowboats
  - Trippe Lake: 11 watercraft
    - 5 Rowboats
    - 3 Canoes
    - 2 Fishing boats
    - 1 Paddleboat

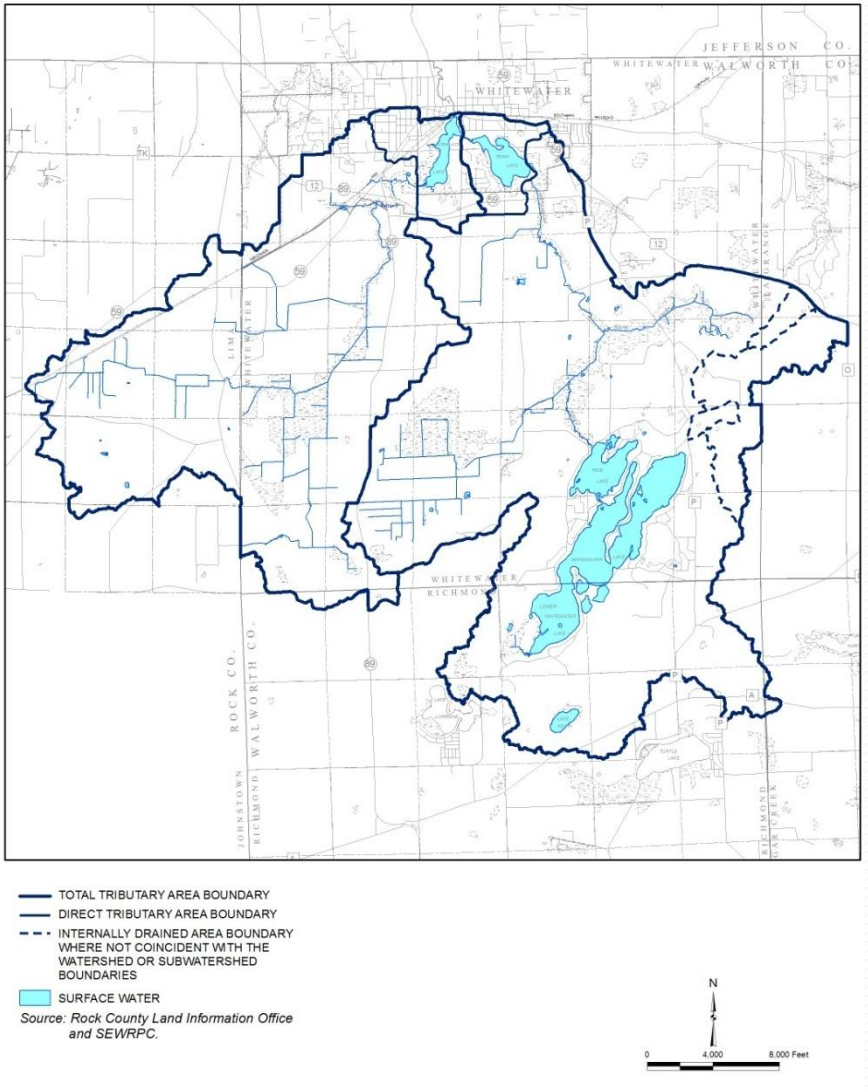
Recreational Usage

- Cravath Lake
  - Weekday users
    - 17 park goers; 12 canoeing; 11 fishing from shore
  - Weekend users
    - 14 park goers; 6 fishing from shore; 2 fishing from boat/canoeing

- Trippe Lake
  - Weekday users
    - 5 park goers
  - Weekend users
    - 19 fishing from shore; 7 park goers

4. The Watershed

- Largely agricultural upstream and urban around the Lakes
  - Moderate to high nutrient export
  - Consistent with poor water quality
- Further urban density development planned



Land Use

The City of Whitewater, Wisconsin

South Whitewater Neighborhood Development Plan

Shaping places, shaping change
Madison & Milwaukee, Wisconsin
Vandewalle & Associates, Inc.

Direct Contaminant Loads

- Cravath Lake: 2000
  - Urban
    - Sediment: 22 tons
    - Phosphorus: 133 pounds
  - Rural
    - Sediment: 48 tons
    - Phosphorus: 170 pounds
  - Total
    - Sediment: 70 tons
    - Phosphorus: 303 pounds
- Cravath Lake: 2035
  - Urban
    - Sediment: 31 tons
    - Phosphorus: 179 pounds
  - Rural
    - Sediment: 10 tons
    - Phosphorus: 28 pounds
  - Total
    - Sediment: 41 tons
    - Phosphorus: 207 pounds

Direct Contaminant Loads

- Trippe Lake: 2000
  - Urban
    - Sediment: 12 tons
    - Phosphorus: 58 pounds
  - Rural
    - Sediment: 54 tons
    - Phosphorus: 180 pounds
  - Total
    - Sediment: 66 tons
    - Phosphorus: 238 pounds
- Trippe Lake: 2035
  - Urban
    - Sediment: 16 tons
    - Phosphorus: 102 pounds
  - Rural
    - Sediment: 10 tons
    - Phosphorus: 16 pounds
  - Total
    - Sediment: 26 tons
    - Phosphorus: 118 pounds

5. Issues and Opportunities

Community Survey

- Community questionnaire survey
  - 432 responses to 2,803 questionnaires (15%)

A few days ago you should have received a survey in the mail from the City of Whitewater, to be returned to the Southeastern Wisconsin Regional Planning Commission.

This survey asks for your opinions on lake issues in Whitewater as well as your ideas regarding threats and opportunities for the lakes. Though the survey takes a few moments for you to complete, your help with the survey will provide information to better protect Trippe and Cravath Lakes for this and future generations.

Please help by returning the survey as soon as possible. If you have already returned the survey, THANK YOU for your help! If you have misplaced the survey and need us to send you another one, please contact us via the phone number or e-mail listed below. Thank you in advance for joining us in this cooperative effort to help protect and improve our community's lakes.

Contact Information for Requesting a Survey:

Economics@uww.edu

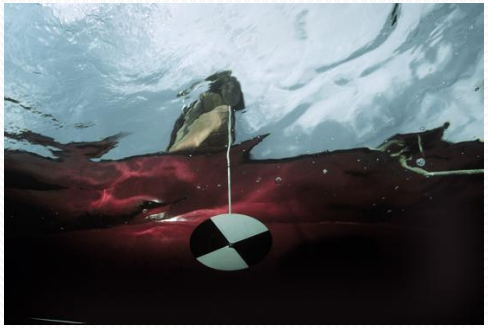
or: 262-472-1361

Respondents

- Respondent profile
  - Who are they?
    - 95% not university students—55% aged about 55 years
    - 60% had a university degree: 40% post-graduate
    - 88% owned the homes in which they lived
    - $50,000 median income
  - 90% did not live on the Lakes: 50% live within ½-mile of the Lakes
    - 1/3 lived closer to Trippe Lake
    - 2/3 lived closer to Cravath Lake
  - 75 % visited the Lakes within the past year
    - ½ visited between 1 and 10 times
    - ½ attended community events
    - 2/5 each traveled by motor vehicle and on foot

Issues

- Recreational Use
  - ¼ owned a boat (fishing boats/canoes most common)
  - 2/3 visited other areas Lakes (20% used Whitewater Lake)
- Importance of Issues
  - Majority identified environmental resources, shopping, agriculture, and schools as important issues
- Awareness of Issues
  - Moderate level of awareness of lake issues
    - Shallow depths and aquatic plants (weeds)
    - Stormwater
    - Poor water clarity



Opportunities

- Willingness-to-Pay
  - Plant Management vs Sediment Control
    - ¼ were NOT willing to pay
    - ¼ would pay for either aquatic plant control OR sediment removal
    - Willing-to-pay at the $10-$25/year rate
  - Plant Management & Sediment Control
    - ¼ were NOT willing to pay
    - ¼ would pay for both
    - Willing-to-pay at the $100-$300/year rate


INVENTORY
&
ANALYSIS
Land Use
Population
Pollution Sources
Water Quality
Aquatic Plants
Fishes & Wildlife
Water Uses
Recreation
Water Use Objectives
Alternative Measures
Recommended Measures
--watershed
--lake
Community Information
DIAGNOSIS
&
PLAN
MANAGEMENT PLAN
RESOURCE NEEDS
(ECOLOGY)
HUMAN USE

6. The Future

- Focus on lake protection
  - Stormwater management
  - Hydrology and morphology
  - Aquatic plant management
- Maintain citizen lake monitoring
  - Water quality
- Continue informational programming
  - Public recreational water use management
  - Institutional development

Lake Protection

- Stormwater management
  - Implement the City Stormwater Management Plan
    - Moderate contaminants in runoff from urban lands
    - Continue to implement rural best management practices and farm plans
    - Promote good housekeeping within the community
    - Maintain stormwater management infrastructure

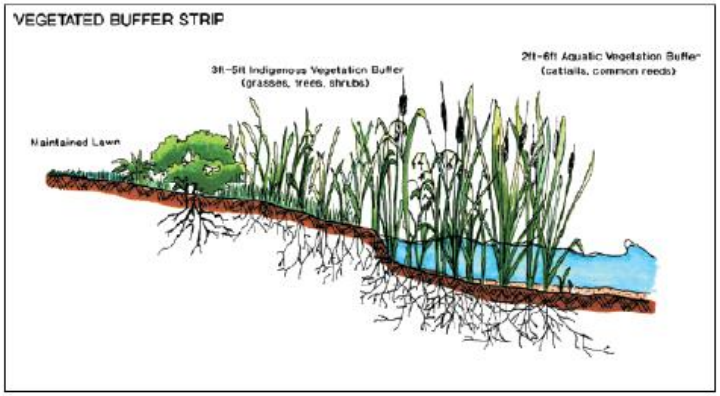
Clean water. Bright future.
Rock River Communities

Lake Protection

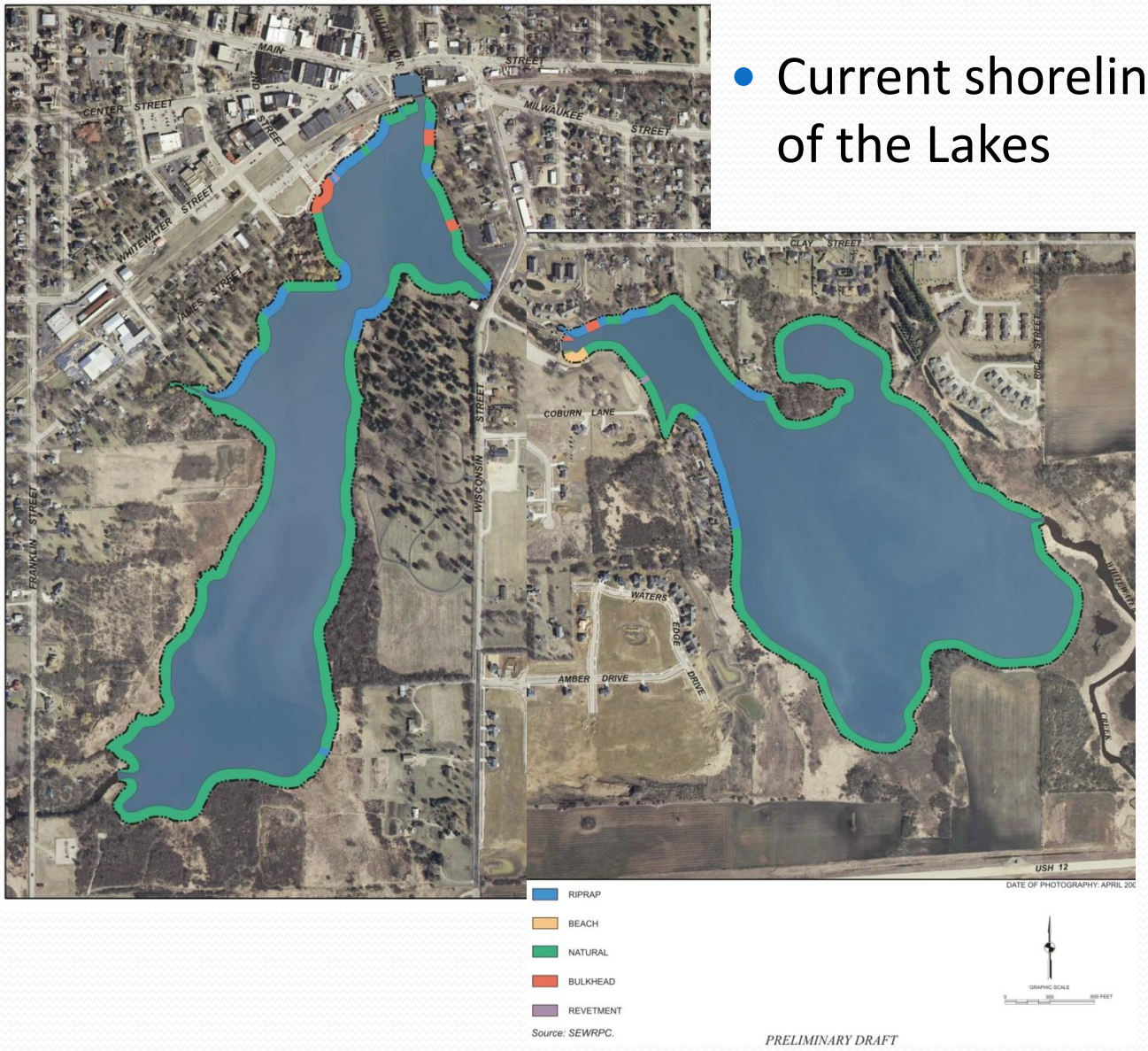
- Hydrology and morphology
  - Reduce sediment and nutrient loads from the watershed
    - Implement stormwater management practices
  - Consider restoration of lake depths
    - Dredging would require State permitting under Chapter 30, Stats.
    - Permit application would require engineering studies
      - Assessment of sediment quality
      - Volume of sediment proposed for removal
      - Disposal alternatives
      - Measures to protect environmentally sensitive areas

Lake Protection

- Aquatic plant management
  - Continue to manage Eurasian water milfoil
  - Given the areas of milfoil involved, use of (i) manual removal from around piers and docks, and (ii) aquatic herbicides would be the recommended management measures
  - Promote use of natural shorescaping to reduce contaminant inputs to the Lakes

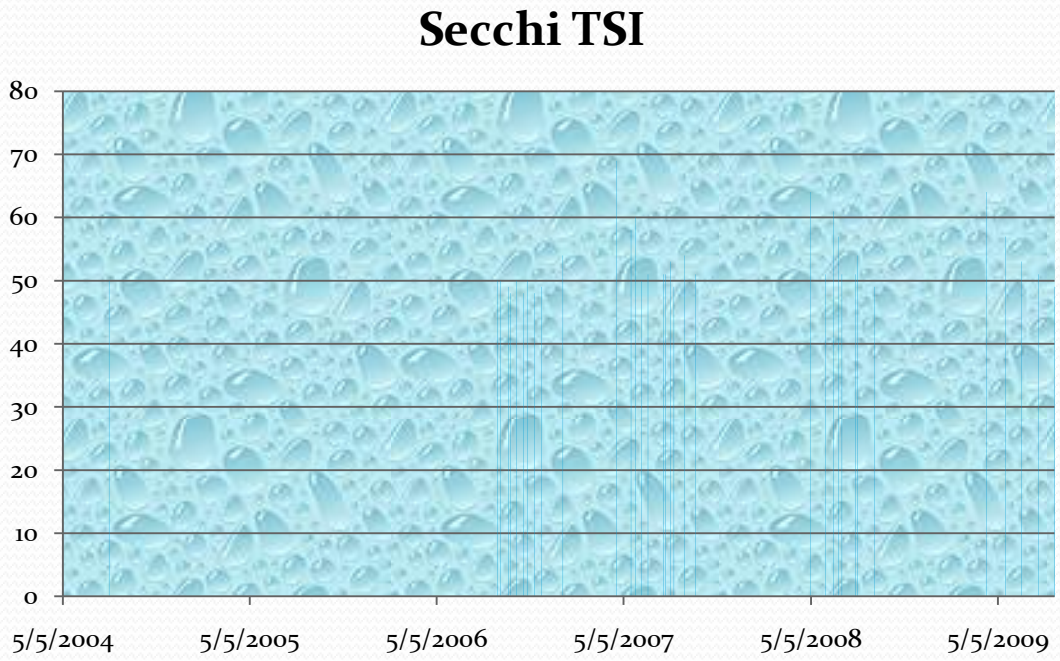


- Current shoreline conditions of the Lakes



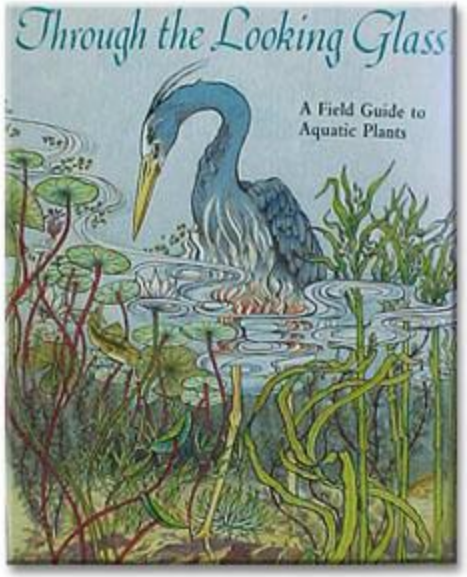
Water Quality

- Maintain citizen lake monitoring



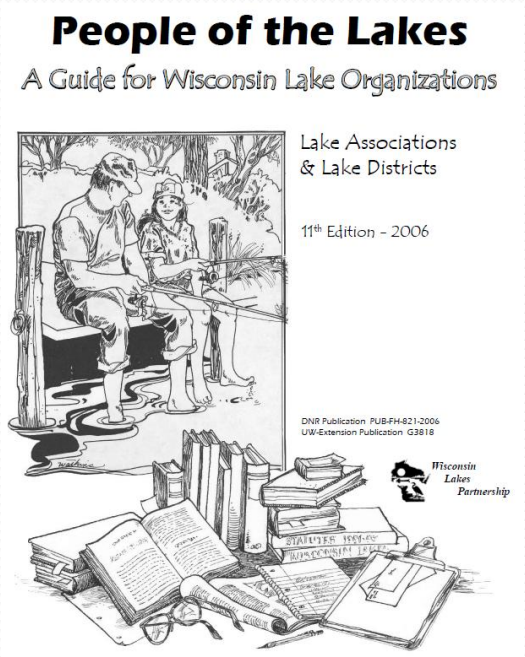
Informational Programming

- Public recreational water use management
  - Maintain signage at public access sites
    - Eurasian water milfoil
  - Continue periodic aquatic plant surveys
  - Consider inclusion of Project WET in school curricula



Informational Programming

- Institutional development
  - Alternative institutional frameworks
    - Municipal: Formalize *Ad Hoc* Lake Committee to advise City Administrator and City Council
    - Public: Consider formation of a city-wide Public Inland Lake Protection and Rehabilitation District per Chapter 33, Stats.
    - Private: Promote the creation of a lake association incorporated under Chapter 181, Stats.



Thank You!

Questions and Discussion